



**General Certificate of Education
June 2010**

Health and Social Care

HC05

Final

Mark Scheme

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Question 1

0 1 Ref to Marina: (insoluble form) will feel full after meals (1) helps reduce over eating/weight gain (1) allows ease of digestive movement / aids digestion AW (1) prevents constipation (1) prevents diverticulitis (1) prevents AW bowel cancer (1) (soluble form) helps lower cholesterol levels (1) Max 3
(3 marks)

0 2 Ref to Marina – may lack energy (1) if also low in carbohydrate (1) lack fat insulation AW (1) lack protection around organs e.g. kidneys (1) fat soluble vitamins transport (1)
(3 marks)

0 3 Any 2 of: wheat bran/brown rice/oats/beans/coconut/dried fruit/wholemeal bread/pulses/fruit/vegetables/nuts
(2 marks)

0 4 Carbohydrates
(1 mark)

0 5 Unsaturated fat is a type of fat in which the carbon chain linked atoms (1) has at least one double band (1) meaning less hydrogen atoms attached then saturated fat (1) where as many hydrogen atoms as possible are connected or vice versa (1) no double bands (1) saturated fats tend to be solid at room temperature (1) unsaturated fats tend to be oils/liquid (1) Max 4
(4 marks)

0 6 Ref to unsaturated fats not raising cholesterol levels in the body (1) no increase in heart disease risk (1) or reverse argument for same points for saturated fats. Idea of health risk re: saturated fat or vice versa.
(2 marks)

Question 2

0 7 Mark has – adequate AW/very slight excess of Vitamin B3 (1) – not enough AW Vitamin C (1) – not enough AW Calcium (1)
Not rewording of table or numerical calculations lacking conclusions.
(3 marks)

0 8 Ref Vitamin B3 – normal enzyme activities (1) for carbohydrate respiration AW (1) for fat metabolism (1) nerve function (1) digestive system functioning (1) sex hormone production (1) Max 2 2 marks

Ref Vitamin C – may cause Mark problems with bones (1) teeth (1) gums (1) ligaments (1) blood vessels (1) slows wound healing (1) poor iron absorption (1) reduced immunity (1) Max 2 2 marks

Ref Calcium – may cause problems with muscle contraction (1) nerve impulse transmission (1) blood clotting (1) bone problems (1) teeth problems (1) Allow ref to rickets (1) Max 2 2 marks

(6 marks)

0 9 Ref to water essential for the regulation of body temperature (1) to allow digestion to occur (1) for chemical reactions in the body (1) and as a lubricant for joints/cells (1) dissolving/transporting substances (1) maintaining blood pressure (1) ignore sweat Max 3

(3 marks)

1 0 Ref to phytochemicals helping to protect the body against disease (1) allows examples for 1 mark each – cancer/cardiovascular disease AW/diabetes/hypertension Max 3

(3 marks)

Question 3

1 1 Ref to vegans not eating any animal food (1) whether animal has been slaughtered or not AW (1) allow examples – eggs, milk or milk produce, cheese, butter 1 mark
Allow more technical responses e.g. need good protein source / B₁₂ source

(2 marks)

1 2 Ref to: increased energy demand AW (1) need more food/high energy value food (1) specifically carbohydrate/fat intake (1) for cellular respiration AW(1) Max 3
(3 marks)

1 3 Ref to coeliac disease sufferers food intolerance (1) cannot digest gluten (1) found in wheat/wheat products/rye (1) causes inability to absorb vitamins and minerals from food (1) need to avoid bread/pasta/cereals in diet (1) Max 3
(3 marks)

1 | 4 Emulsifiers needed to prevent water/fat separation AW(1) to maintain mixture/texture of foods (1) allow example – mayonnaise/low fat spreads (1)
Max 2
(2 marks)

1 | 5 Preservatives needed to prevent food deterioration AW prolong shelf life (1)
reduce/kill microbes/microbial activity AW (1) Max 2
(2 marks)

1 | 6 Ref to nutritional value as – energy content/calorific – joule content (1)
macronutrient content – or named examples, protein/fat/carbohydrate AW (1) and
micronutrient content or named examples – vitamins and minerals (1)
(3 marks)

Question 4

1 | 7 Ref to: Seafood cases most/Eggs least (1) Seafood 2x common as Peanut allergies (1) Eggs and Milk similar numbers (1) Peanuts nearly 3x Eggs/Milk cases (1) Seafood cases more than rest combined (1)
Not restatements of data Max 4
(4 marks)

1 | 8 Any three of: reactions to seafood/peanuts reported as may be more severe/obvious
c.f. eggs/milk – less severe – not reported (1)

More individuals vulnerable to seafood/peanuts antigens AW c.f. eggs/milk (1)

Egg/milk vulnerable people may be more aware – avoid foods – or reverse for seafood/peanuts (1)
(3 marks)

1 | 9 Ref to: preventing stray/falling hair contacting food (1) so preventing microbial AW transfer (1) (Method mark needed not bacteria falling)
(2 marks)

2 | 0 Ref to: hands can be thoroughly cleaned (1) removing microbes which may have been transferred (1) allow ref to 'trapped' microbes infecting food (1) Max 2
(2 marks)

2 | 1 Ref to: microbes killed/destroyed AW (1) by high temperature (1) high heat / over 65°C Not just heat
(2 marks)

2 2 Any 2 of: individuals recovering from illness/individuals with reduced immune systems/pregnant women

Max 2

(2 marks)